

Claims

1. Occlusion device consisting of a braiding (2) of thin wires or threads (4) given a suitable form by means of a molding and heat treatment procedure, having a proximal retention area (6) and a distal retention area (8), whereby the ends of the wires or threads (4) converge into a holder (5) in the distal retention area (8), and having a cylindrical crosspiece (10) interposed between said proximal and distal retention areas (6,8), whereby the two retention areas (6,8) are usually positioned on the two sides of a shunt to be occluded in a septum by means of an intravascular surgical procedure while crosspiece (10) transverses the shunt,
characterized in that
proximal retention area (6) of braiding (2) exhibits a flaring toward proximal end (12).
2. Occlusion device in accordance with claim 1,
characterized in that
braiding (2) is composed of nitinol or of another shape-memory material or material having memory effect.
3. Occlusion device in accordance with claim 2,
characterized in that
braiding (2) is formed from a shape-memory polymer, in particular based on a polyanhydride matrix or on polyhydroxycarboxylic acids.
4. Occlusion device in accordance with claim 2,
characterized in that
braiding (2) is formed from a shape-memory polymer of the block copolymer form.

5. Occlusion device in accordance with one of the preceding claims,
characterized in that
braiding (2) tapers to the diameter of one of the catheters used in the
intravascular surgical procedure.
6. Occlusion device in accordance with one of the preceding claims,
characterized in that
proximal retention area (6) of braiding (2) exhibits a flattened tulip-shaped
flared contouring to proximal end (12).
7. Occlusion device in accordance with one of claims 1 to 5,
characterized in that
proximal retention area (6) of braiding (2) exhibits a bell-shaped flared
contouring to proximal end (12).
8. Occlusion device in accordance with one of the preceding claims,
characterized in that
the wires or threads (4) of braiding (2) at the open end (12) of proximal
retention area (6) are looped back to the closed end (3) of the distal retention
area (8) and secured there in holder (5).
9. Occlusion device in accordance with one of the preceding claims,
characterized in that
at least one fabric insert is arranged in crosspiece (10) or in proximal retention
area (6) for the complete occluding of the shunt.
10. Method for manufacturing an occlusion device in accordance with one of
claims 1 to 9,
characterized by
the following process steps:

- a) configuring a funnel-shaped hollow braiding (2) by means of a known braiding method, whereby said hollow braiding (2) is bundled at a first distal end (3) and remains open on an opposite second proximal end (12); and
 - b) forming a proximal retention area (6) at the open second end (12), a distal retention area (8) at the bundled first end (3), and interposing a cylindrical crosspiece (10) between said proximal and said distal retention areas (6, 8).
11. Method in accordance with claim 10,
characterized by
the process step of configuring a holder (16) at the bundled distal end (3) of said funnel-shaped hollow braiding (2).
12. Method in accordance with claim 10 or 11,
characterized in that
the wires and threads (4) of braiding (2) at outer edge (19) of the flattened tulip shape of the open end (12) of proximal retention area (6) are looped back to the closed end (3) of the distal retention area (18) and are bundled and secured there in holder (5).
13. Method in accordance with claim 10 or 11,
characterized in that
the process step of forming retention areas (6, 8) and crosspiece (10) includes a molding and/or heat treatment.
14. Method in accordance with one of claims 10 to 13,
characterized in that
funnel-shaped hollow braiding (2) is produced such that the thin wires or threads (4) which constitute the finished braiding (2) are intertwined at the proximal open end (12) of braiding (2) when forming the funnel-shaped hollow braiding (2).